## We claim:

- 1. A method for ascertaining the rotational speed of an internal combustion engine, comprising the steps of:
- a) scanning a sector wheel which is driven by the internal combustion engine,
- b) detecting a pass of a specific segment of the sector wheel, measuring the duration of this segment pass and ascertaining a rotational speed value therefrom,
- c) detecting a pass of a specific part of the segment before and after ascertaining the rotational speed value, and ascertaining a gradient of the duration of the partsegment pass, and
- d) associating the rotational speed value with the gradient in order to update the rotational speed value.
- 2. The method as claimed in Claim 1, wherein a short-time rotational speed value is determined from each pass of the specific part of the segment, and the arithmetic average of the short-time rotational speed values before and after ascertaining the rotational speed value is used as a gradient.
- 3. The method as claimed in Claim 2, wherein the gradient is additively associated with the rotational speed value.
- 4. The method as claimed in Claim 1, wherein the part segment comprises between 1/5 and 1/60 of the segment.

- 5. A method for ascertaining the rotational speed of an internal combustion engine, comprising the steps of:
- a) scanning a sector wheel which is driven by the internal combustion engine,
- b) measuring the duration of the pass of a specific segment of the sector wheel and evaluating a rotational speed value therefrom,
- c) detecting a pass of a specific part of the segment before and after evaluating the rotational speed value, and evaluating a gradient of the duration of the part-segment pass, and
- d) associating the rotational speed value with the gradient in order to update the rotational speed value.
- 6. The method as claimed in Claim 5, wherein a short-time rotational speed value is determined from each pass of the specific part of the segment, and the arithmetic average of the short-time rotational speed values before and after ascertaining the rotational speed value is used as a gradient.
- 7. The method as claimed in Claim 6, wherein the gradient is additively associated with the rotational speed value.
- 8. The method as claimed in Claim 5, wherein the part segment comprises between 1/5 and 1/60 of the segment.

- 9. An arrangement for ascertaining the rotational speed of an internal combustion engine, comprising:
- a) a sensor for scanning a sector wheel which is driven by the internal combustion engine,
- b) means for detecting a pass of a specific segment of the sector wheel, measuring the duration of this segment pass, and ascertaining a rotational speed value therefrom.
- c) means for detecting a pass of a specific part of the segment before and after ascertaining the rotational speed value, and ascertaining a gradient of the duration of the part-segment pass, and
- d) means for associating the rotational speed value with the gradient in order to update the rotational speed value.
- 10. The arrangement as claimed in Claim 9, wherein the means for detecting, measuring and ascertaining are formed by a microprocessor.
- 11. The arrangement as claimed in Claim 9, wherein the means for detecting and ascertaining are formed by a microprocessor.
- 12. The arrangement as claimed in Claim 9, wherein the means for associating are formed by a microprocessor.
- 13. The arrangement as claimed in Claim 9, wherein the means for ascertaining the gradient determine a short-time rotational speed value from each pass of the specific part of the segment, and the arithmetic average of the short-time rotational speed values before and after ascertaining the rotational speed value is used as a gradient.

- 14. The arrangement as claimed in Claim 13, wherein the gradient is additively associated with the rotational speed value.
- 15. The arrangement as claimed in Claim 9, wherein the sensor is a Hall sensor.
- 16. The arrangement as claimed in Claim 9, wherein the specific part of the segment of the sector wheel comprises between 1/5 and 1/60 of the segment.